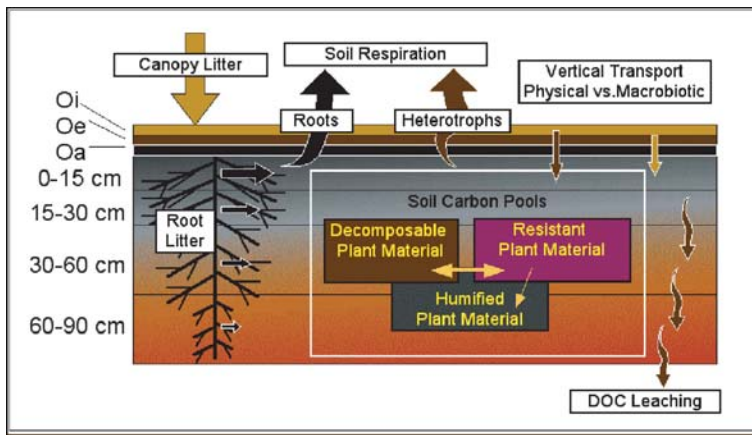


Enriched Background Isotope Study (EBIS)

EBIS takes advantage of an extraordinary opportunity:
tracing a large pulse of radiocarbon through an entire forest ecosystem
at Oak Ridge Reservation, Tennessee, USA.



Numerous carbon fluxes, pools, and processes are being studied in a multi-institutional collaborative effort led by Paul Hanson, ORNL. EBIS generates nearly 1000 radiocarbon analyses per year, which are facilitated by Chris Swanston at the Center for Accelerator Mass Spectrometry, LLNL.

Soil organic carbon stabilization:

Chris Swanston - Lawrence Livermore National Lab
Margaret Torn - Lawrence Berkeley National Lab
Julie Jastrow - Argonne National Lab

Dissolved organic carbon fluxes:

Phillip Jardine - Oak Ridge National Lab
Don Todd - Oak Ridge National Lab

Soil Respiration and air monitoring:

Malu Cisneros - University of California, Irvine
Sue Trumbore - University of California, Irvine
Paul Hanson - Oak Ridge National Lab

Root cycling and carbon inputs:

Julia Gaudinski - University of California, Santa Cruz
Dev Joslin - Oak Ridge National Lab

Microbial processes:

Margaret Torn - Lawrence Berkeley National Lab

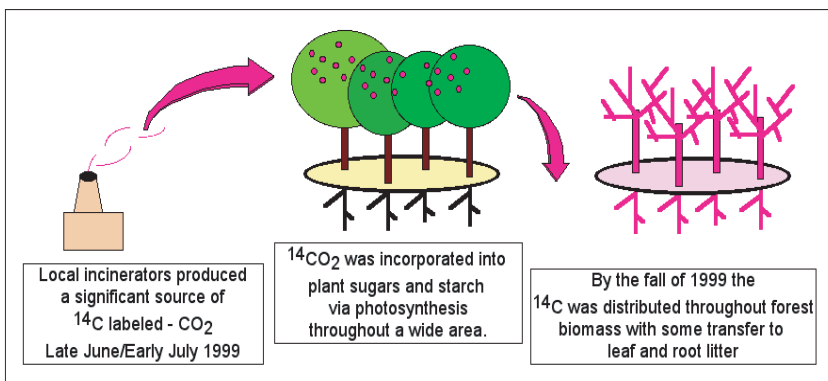
Litter input, bulk horizon analysis, and carbon flux:

Paul Hanson - Oak Ridge National Lab
Chuck Garten - Oak Ridge National Lab
Don Todd - Oak Ridge National Lab
John Southon - University of California, Irvine

Carbon flux modeling:

Mac Post - Oak Ridge National Lab

Background and study design....

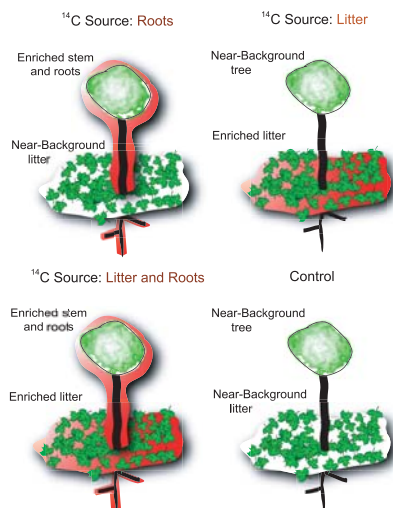


The radiocarbon pulse was inadvertent, but researchers and the DOE acted quickly to convert it to scientific benefit.



Both near-background and highly-enriched leaves were collected in the Fall,

then dried and stored until they could be placed experimentally.



Near-background and highly-enriched leaves were reciprocally transplanted, so that the enriched leaves were placed inside near-background stands, and vice versa. Ideally, this design allows the source of enriched ^{14}C to be identified in any given plot. The leaves were placed in the winter for three consecutive years. Soil samples are taken yearly from each plot, and soil water is sampled throughout the year. Litterfall and environmental data are also collected.

